

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

COMCAST CABLE
COMMUNICATIONS, LLC,

No. C 16-06180 WHA

Plaintiff,

v.

**ORDER RE PILOT MOTIONS
FOR SUMMARY JUDGMENT**

OPENTV, INC., and NAGRAVISION SA,

Defendants.

INTRODUCTION

In this patent action for declaratory judgment of non-infringement, as part of a pilot procedure to more quickly and efficiently reach the merits, both sides move for summary judgment on one asserted claim of one patent-in-suit. Plaintiff's motion for summary judgment is **GRANTED** as to non-infringement and **DENIED AS MOOT** as to invalidity. Defendants' motion for summary judgment of infringement is **DENIED**.

STATEMENT

The procedural background of this action thus far has been summarized in a prior order (Dkt. No. 145 at 1–2) and need not be repeated here. In brief, plaintiff Comcast Cable Communications, LLC, brought this action for declaratory judgment of non-infringement against defendants and patent owners OpenTV, Inc., and Nagravision SA (collectively, "OpenTV"), both subsidiaries of Kudelski SA, after OpenTV approached Comcast to negotiate a licensing deal based on the premise that certain Comcast products infringed Kudelski's patent

1 portfolio. After an initial case management conference, a case management order required each
2 side to bring a pilot summary judgment motion on one chosen claim — OpenTV, to set forth its
3 strongest case for infringement, and Comcast, to set forth its strongest case for non-
4 infringement or invalidity (Dkt. No. 82). The parties agreed to both cross-move for summary
5 judgment on Claim 1 of United States Patent No. 6,895,595 (“the ’595 patent”) (Dkt. No. 114).

6 The technology at issue in this case concerns the provision of interactive television
7 experiences to subscribers. As of May 1998, when the ’595 patent was filed, television
8 providers wanting to provide such experiences would typically transmit to a subscriber’s
9 television a broadcast signal that included both audio-video and interactive data. An interactive
10 television receiver connected to the television, known as a “set-top box,” would receive the
11 signal and separate the audio-video data from the interactive data. The set-top box would then
12 feed the audio-video data consisting of the television program to the television and use the
13 interactive data to execute an interactive television application and generate interactive graphics
14 or audio to be displayed along with the television program (Dkt. No. 149-2 at 1:30–57).

15 This transmission method consumed expensive bandwidth and was further constrained
16 by the limited amount of memory available on set-top boxes. To alleviate these restrictions,
17 television providers would often divide applications into “modules” of data and transmit the
18 modules to all subscribers in a repeating cycle called a “carousel,” from which set-top boxes
19 could extract any needed modules (while skipping unneeded ones) and reassemble the modules
20 to run applications. The carousel method conserved set-top box memory by enabling the
21 sharing of commonly-used modules between different applications and saved bandwidth by
22 reducing the amount of data transmitted (*see id.* at 2:9–17; 150-11 at 28:10–19, 30:17–32:25).

23 Carousels, however, did not differentiate between different subscribers who needed
24 different applications, and the necessary components of any given application could reside in
25 different carousels or in modules available at different times. A subscriber who “missed” a
26 particular module needed to execute an application would therefore have to wait for the
27 carousel to come back around with that module (*see* Dkt. No. 149-2 at 2:17–20).

28 Against this technological backdrop, the ’595 patent describes and claims an improved
“system and method for managing modules” that shifts transmission of some modules to a

second signal received over a second input port while monitoring both signals for modules needed for applications (*see id.* at 2:20–31). For example, “[t]he system may provide for modules which are in greater demand among subscribers of the system to be transmitted to all of the subscribers via a broadcast channel, while modules which are in less demand are transmitted to individual subscribers via a modem channel” (*id.* at 3:4–9).

Specifically, Claim 1 recites:

An interactive television receiver for retrieving modules for an interactive television application, the receiver comprising:
 a first input port configured to receive a broadcast signal;
 a second input port configured to receive a second signal;
 a microprocessor coupled to said first input port and said second input port, said microprocessor being configured to:
 execute said interactive television application;
 store one or more requests generated by said interactive television application for one or more corresponding requested interactive television application modules;
 monitor both said broadcast signal received by said first input port and said second signal received by said second input port for said requested interactive television application modules;
 retrieve said requested interactive television application modules from one or both of said broadcast signal and said second signal;
 and
 store said retrieved interactive television application modules;
 a data storage device coupled to said microprocessor and configured to store said requests and said retrieved interactive television application modules.

The carousel method is not expressly mentioned in Claim 1 but is expressly and repeatedly referenced in other claims and in the rest of the specification.

OpenTV accuses 16 models of set-top boxes, each of which runs Comcast’s Xfinity X1 platform, of infringing Claim 1. According to OpenTV, all 16 models work the same way with respect to Claim 1 and any differences are irrelevant to non-infringement (Dkt. No. 148-3 at 4, 8). Each of the accused set-top boxes includes a *single* coaxial cable input that receives a modulated composite signal from Comcast’s cable head-end. The modulated composite signal contains both “linear video,” representing television programs intended for multiple subscribers, and “IP data” intended for a specific subscriber. Inside the set-top box, a front-end systems-on-

1 chip captures and digitizes the composite signal. Tuners in the front-end filter and segregate the
2 digitized signal into a “linear video” signal and an “IP data” signal, each of which is
3 demodulated and sent to a different part of a video systems-on-chip for further processing. The
4 “linear video” signal is ultimately displayed to the subscriber as a video stream, whereas the “IP
5 data” signal is passed on to applications that use the data (*see* Dkt. No. 148-5 at 12–13, 38).

6 Comcast’s X1 platform, first released in 2012, uses a “cloud-based” design significantly
7 different from the technology that informed the ’595 patent in 1998. The accused set-top boxes
8 do not download or run applications, nor do they use carousels to receive modules for local
9 processing. Instead, each set-top box contains software called the Cross-Platform Runtime
10 Environment (“XRE”) Receiver, which serves as a display vehicle for applications executed on
11 Comcast’s remote XRE Servers. When a set-top box receives user input, it passes that input
12 along to an XRE Server. In response, the XRE Server executes the application and issues
13 commands to the XRE Receiver on the set-top box, instructing it on what to display and how to
14 display it. This kind of cloud-based design requires low latency and high bandwidth because it
15 depends on the prompt transmission of messages going both ways between set-top boxes and
16 remote servers. It is practicable now due to modern cable network infrastructure, which has
17 significantly improved on the latency and bandwidth constraints of older networks like those
18 that existed in 1998 (*see* Dkt. Nos. 150-26 ¶¶ 73–74, 77; 148-3 at 7–8).

19 Comcast describes the ’595 patent as an outdated solution to an outdated problem in
20 light of modern advances in cable network infrastructure, citing its own X1 platform as the
21 proof, and moves for summary judgment of non-infringement and invalidity based on
22 obviousness. OpenTV insists that the invention described in the ’595 patent nevertheless
23 remains a core part of Comcast’s X1 platform and moves for summary judgment of
24 infringement. This order follows full briefing on each side’s motion for summary judgment
25 (*i.e.*, three rounds of briefing per side) and oral argument.

26 ANALYSIS

27 1. LEGAL STANDARD.

28 Summary judgment is appropriate when there is no genuine dispute of material fact and
the moving party is entitled to judgment as a matter of law. F.R.C.P. 56(a). A genuine dispute

1 of material fact is one that “might affect the outcome of the suit under the governing law.”
2 *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–48 (1986). In deciding a motion for
3 summary judgment, the court must believe the non-movant’s evidence and draw all justifiable
4 inferences in their favor. *Id.* at 255.

5 **2. NON-INFRINGEMENT (OR INFRINGEMENT).**

6 Comcast contends it is entitled to summary judgment of non-infringement as to Claim 1
7 because the accused set-top boxes do not have two distinct “input ports” that receive two
8 distinct signals or “monitor both” signals for requested modules (Dkt. No. 150-4 at 6–19).
9 Instead, Comcast claims, the coaxial cable connected to each set-top box is the *sole* input port
10 for a composite signal transmitted to the set-top box. OpenTV disagrees that this feature of the
11 accused set-top boxes is dispositive, and theorizes that other circuitry *inside* the accused set-top
12 boxes actually meets each limitation of Claim 1. To determine whether summary judgment of
13 non-infringement (or infringement) is warranted, this order must first construe Claim 1 to
14 determine its scope and then determine whether the properly-construed Claim 1 reads on
15 Comcast’s accused set-top boxes. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d
16 1298, 1304 (Fed. Cir. 1999).

17 Claim terms “are generally given their ordinary and customary meaning,” *i.e.*, “the
18 meaning that the term would have to a person of ordinary skill in the art in question at the time
19 of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005). To
20 properly construe a claim, a court must examine the claim, the rest of the specification, and, if
21 in evidence, the prosecution history. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d
22 1313, 1324 (Fed. Cir. 2003). When legal “experts” offer views on claim construction that
23 conflict with each other or with the patent itself, such conflict does not create a question of fact
24 or relieve the court of its obligation to construe the claim according to the tenor of the patent.
25 *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 983 (Fed. Cir. 1995).

26 To prove infringement, OpenTV must show that Comcast’s accused set-top boxes meet
27 each properly-construed limitation of Claim 1 either literally or under the doctrine of
28 equivalents. *See Deering Precision Instruments, LLC v. Vector Distribution Sys., Inc.*, 347 F.3d
1314, 1324 (Fed. Cir. 2003). To establish literal infringement, all of the elements of the claim,

1 as correctly construed, must be present in the accused system. *TechSearch, LLC v. Intel Corp.*,
2 286 F.3d 1360, 1371 (Fed. Cir. 2002). OpenTV may also establish infringement under the
3 doctrine of equivalents by “showing that the difference between the claimed invention and the
4 accused product [is] insubstantial,” including “by showing on a limitation by limitation basis
5 that the accused product performs substantially the same function in substantially the same way
6 with substantially the same result as each claim limitation of the patented product.” *Crown*
7 *Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009).

8 Here, proper construction of just one disputed term — “input port” — suffices to
9 warrant summary judgment of non-infringement in Comcast’s favor. Comcast contends this
10 term specifically means “an interface configured to receive a signal that is input to the
11 interactive television receiver.” OpenTV contends this term broadly means “an interface for
12 receiving signals from one or more signal sources” (*see* Dkt. No. 148-3 at 10–11). The parties
13 dispute (a) whether a single “input port” can receive signals from multiple sources, and (b) what
14 limits, if any, restrict where an “input port” can be located.

15 The plain language of Claim 1 contemplates two distinct “input ports” — one
16 “configured to receive a broadcast signal” and another “configured to receive a second signal”
17 distinct from the broadcast signal. In support of its contrary position, OpenTV misleadingly
18 quotes a fragment of the specification for the proposition that “an ‘input port’ [i]s a port ‘for
19 receiving signals *from various signal sources*’” (Dkt. No. 148-3 at 11 (quoting Dkt. No. 149-2
20 at 5:18–24 with added emphasis)). Actually, the quoted portion of the specification, which
21 describes the preferred embodiment of the claimed invention as shown in Figure 2, states, “[The
22 tuner] may be replaced by other means, all collectively referred to herein as *input ports, for*
23 *receiving signals from various signal sources*” (Dkt. No. 149-2 at 5:22–24 (emphasis added)).
24 In other words, that portion of the specification refers generally to *multiple* input ports
25 collectively receiving *multiple* signals from various sources, not to any *single* input port
26 receiving *multiple* signals from various sources as OpenTV suggests.

27 OpenTV further contends there should be *no* restriction whatsoever on where an “input
28 port” can be located because no such restriction is explicit in the plain language of Claim 1
(Dkt. No. 161-4 at 7–8). Through this proposed construction, OpenTV attempts to validate its

infringement theory that unspecified “distinct parts” of the video systems-on-chip inside each accused set-top box — rather than the single coaxial cable connected to each set-top box — actually constitute the claimed first and second “input ports” because they receive filtered and segregated “linear video” and “IP data” signals from the front-end (*see id.* at 5–6). OpenTV’s proposed construction, however, is overbroad and incompatible with the rest of the specification and the underlying purpose of the ’595 patent.

Read as a whole, the ’595 patent does not preclude the possibility that an “input port” can be connected to the outside of a set-top box *or* housed on the inside of the set-top box. For example, in describing the preferred embodiment of the invention, the specification contemplates that a tuner *inside* the set-top box might serve as an “input port” for receiving a broadcast signal, as shown in Figure 2 (*see* Dkt. No. 149-2 at 5:19–24):

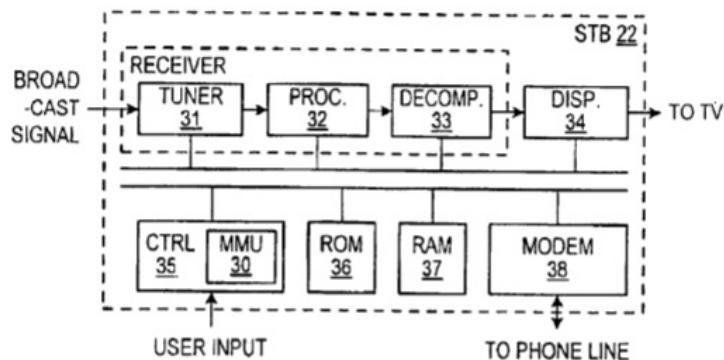


FIG. 2

Both in briefing and during oral argument, OpenTV placed great emphasis on the fact that an “input port” does not need to be an interface on the *outside* of a set-top box. This argument is correct as far as it goes, but misses the point. Specifically as to Figure 2, for example, the specification explains (*id.* at 5:19–57 (emphasis added)):

The broadcast signal is received and fed into tuner 31. Tuner 31 selects the channel on which the broadcast audio-video-interactive signal is transmitted and passes the signal to processing unit 32. (Tuner 31 may be replaced by other means, all collectively referred to herein as input ports, for receiving signals from various signal sources.) Processing unit 32 demultiplexes the packets from the broadcast signal if necessary and reconstructs the television programs and/or interactive applications embodied in the signal. The programs and applications are then decompressed by decompression unit 33. The audio and video information associated with the television programs embodied in the signal is

then conveyed to display unit **34**, which may perform further processing and conversion of the information into a suitable television format Applications reconstructed from the broadcast signal are routed to random access memory (RAM) **37** and are executed by control system **35**. . . . Modem **38** provides both a return path by which viewer data can be transmitted to the broadcast station and an alternate path by which the broadcast station can transmit data to the set-top box.

In short, the preferred embodiment describes a system where two distinct “input ports” receive two distinct signals that are transmitted “to the set-top box” from an external source, *i.e.*, the “broadcast station.” (To repeat, this was part of the invention to alleviate the restrictions of previous systems that used only one “input port.”) This receipt unambiguously occurs *before* further processing of the signals inside the set-top box itself, including demultiplexing, reconstruction, decompression, and ultimate conveyance for television display or application execution. This refutes OpenTV’s suggestion that these internal processes separately constitute “receipt” of distinct signals at distinct “input ports” inside the set-top box.

Despite its own reliance on part of the foregoing description, OpenTV protests that Comcast cannot use Figure 2 to support its non-infringement argument because “a claim cannot be limited to the patent’s preferred embodiment” (Dkt. No. 161-4 at 6–7). True, the mere fact that the specification describes only a single embodiment, standing alone, is insufficient to limit otherwise broad claim language absent a clear indication in the intrinsic record that the patentee intended the claim to be so limited. *E.g.*, *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1342 (Fed. Cir. 2010); *Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1345 (Fed. Cir. 2008). Here, however, the specification of the ’595 patent *as a whole* — not just Figure 2 — clearly shows that an “input port” receives a signal when it *initially* arrives at a set-top box from an *external* source and *before* it undergoes further processing inside the set-top box itself. *Phillips*, 415 F.3d at 1315 (“[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” (quotation and citation omitted)).

For example, the abstract of the ’595 patent describes a “system [that] transmits modules from a broadcast station to a plurality of receiving stations through various paths, such as broadcast channels and modem channels.” *See, e.g., Netcraft Corp. v. eBay, Inc.*, 549 F.3d

1394, 1398–99 (Fed. Cir. 2008) (considering abstract in affirming claim construction). This indicates that the “various paths” contemplated by the claimed invention are paths *external* to the set-top box itself (*e.g.*, between a transmitting “broadcast station” and receiving set-top boxes), not merely “paths” that the filtered and segregated components of a signal might take *inside* the set-top box after initial receipt and processing. Similarly, the summary of the claimed invention explains that “[t]he set-top box monitors the input ports to determine whether a packet received at the input port contains module data and, if so, whether the module should be processed and stored in the set-top box.” The summary further notes that “[t]he various types of packets are generally time multiplexed with each other,” and “[i]f the system determines that the module should be stored, the packets corresponding to the module are extracted from the interactive television signal” before “the module is processed and made available for execution” (Dkt. No. 149-2 at 2:41–51). This, too, indicates that the claimed invention requires a signal to be “received at the input port” *before* any internal processing or storage takes place.

OpenTV cites another fragment of the specification, again describing the preferred embodiment, for the proposition that “the two signals, or ‘module sources,’ can include ‘processed, *e.g.* reconstructed and decompressed, signals.’” Based on this fragment, OpenTV contends the ’595 patent actually contemplates internal “input ports” that receive signals only *after* they have been processed inside the set-top box (Dkt. No. 161-4 at 9). Actually, the quoted portion of the specification states (Dkt. No. 149-2 at 10:4–13 (emphasis added)):

The module management unit monitors the *various module sources coupled to the set-top box*. As described above, the module sources may include broadcast signals, http signals, modem communications or other means for *supplying input signals to the set-top box*. (The term “module source” as used herein is broadly interpreted to include both transmission sources, such as satellite or modem transmissions, and inputs to the module management unit which carry processed, *e.g.*, reconstructed and decompressed, signals.)

In an earlier description of the preferred embodiment, the specification also expressly states that “[t]he signals transmitted via the *broadcast and modem channels* may both embody various modules. Each of these two channels is therefore considered a ‘module source’ for the purposes of this description” (*id.* at 3:61–66 (emphasis added)). This does not support OpenTV’s suggestion that “module sources” includes circuitry inside the set-top box itself that merely

1 splits up a received composite signal for further processing. On the contrary, the specification
2 confirms that the only “module sources” contemplated by the ’595 patent are *external* sources
3 that can be “coupled to” the set-top box to “supply[] input signals to the set-top box.”

4 Finally, Comcast correctly points out that OpenTV’s proposed construction of “input
5 ports” would run afoul of the very purpose of the supposed invention in the ’595 patent. To
6 repeat, the module management system and method described in the ’595 patent were supposed
7 to alleviate bandwidth, memory, and timing restrictions by shifting transmission of some
8 modules to *a second signal received over a second input port*. Prior art predating this supposed
9 invention could already use a *single* input port to receive a composite signal and then split that
10 composite signal, as received, into its various components for further separate processing. The
11 supposed invention relieved some of the restrictions associated with these prior systems (*e.g.*,
12 bandwidth restrictions) by adding a separate, second input for some of the transmitted data.

13 Now, OpenTV wants to claim ownership over the use of even a single input port to
14 receive a composite signal merely because the received signal is then separated into its various
15 components. This sleight of hand is firmly rejected. In short, the basic purpose and focus of the
16 ’595 patent refute OpenTV’s proposed construction. *See Gemalto S.A. v. HTC Corp.*, 754 F.3d
17 1364, 1368–69 (Fed. Cir. 2014) (considering “entire purpose of the invention,” as demonstrated
18 by the specification, in construing a disputed claim); *On Demand Machine Corp. v. Ingram*
19 *Indus., Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006) (“[T]he role of the specification is to describe
20 and enable the invention. In turn, the claims cannot be of broader scope than the invention that
21 is set forth in the specification.”). The correct construction of “input port” adopted herein is an
22 interface that receives a signal when it initially arrives at a set-top box from an external source
23 and before it undergoes further processing inside the set-top box itself. This construction is
24 clear from the patent itself and consistent with the prosecution history evidence in the record, to
25 the extent that said evidence touches on the subject of “input ports” (*see, e.g.*, Dkt. No. 159-3 at
26 23–24 (discussing prosecution history evidence concerning the “monitor both” limitation)).

27 Properly construed, the “first input port configured to receive a broadcast signal” and
28 “second input port configured to receive a second signal” limitations of Claim 1 are simply not
met by Comcast’s accused set-top boxes. OpenTV makes no argument that, under this order’s

construction of the “input ports” requirement, the accused set-top boxes infringe either literally or under the doctrine of equivalents. Indeed, in response to Comcast’s non-infringement arguments, OpenTV expressly abandoned its prior theory that the “two sets of tuner banks on the front-end [systems-on-chip]” of Comcast’s accused set-top boxes constitute the first and second “input ports” required by Claim 1 (Dkt. No. 161-4 at 5 n.2, 8 n.4). OpenTV’s sole remaining infringement theory as to the “input ports” requirement is based on the video systems-on-chip. As explained, this theory is unavailing. Moreover, inasmuch as Comcast’s accused set-top boxes do not have the required “input ports,” they also cannot meet the limitation of “a microprocessor coupled to *said first input port and said second input port*, said microprocessor being configured to . . . monitor *both said broadcast signal received by said first input port and said second signal received by said second input port* for said requested interactive television application modules” (emphasis added). Comcast is entitled to summary judgment of non-infringement on this basis alone. Accordingly, this order does not reach the parties’ additional non-infringement (or infringement) or invalidity arguments.

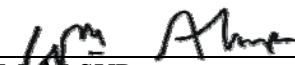
CONCLUSION

For the foregoing reasons, plaintiff’s motion for summary judgment is **GRANTED** as to non-infringement and **DENIED AS MOOT** as to invalidity. The patent owners’ motion for summary judgment of infringement is **DENIED**.

Because Claim 1 was the patent owners’ best shot at proving infringement, this outcome bodes poorly for the remainder of their case. For the time being, no more motions may be filed until further order of the Court. The sole exception is that plaintiff may, within **FOURTEEN CALENDAR DAYS**, bring a motion for attorney’s fees under the Patent Act based on the patent owners’ wrongful assertion of Claim 1 of the ’595 patent. Any such motion must establish both entitlement to and the amount of the fees sought.

IT IS SO ORDERED.

Dated: August 4, 2017.



WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE